EduSahara™ Learning Center Assignment

Grade : Class X, SSC
Chapter : Sets
Name : Operations on Sets

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1. If $A \subset B$, then which of the following are true?
   a) $A \cup B = B$
   b) $A \cup B = \varnothing$
   c) $A \cap B = A$
   d) $A \cup B = A$
   e) $A \cap B = B$

   (i) {d,c} (ii) {e,b,a} (iii) {b,a} (iv) {d,c,a} (v) {a,c}

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2. If $A \subset B$, then which of the following are true?
   a) $A \cup B = \varnothing$
   b) $A - B = B$
   c) $B - A = B$
   d) $B - A = A$
   e) $A - B = \varnothing$

   (i) {c,d,e} (ii) {b,e} (iii) {e} (iv) {a,e}

Given 5 sets A = {10,9,7,1} , B = {10,7,9,1} , C = {3,9,7,2,10,5,4} ,

3. D = {13,12,17,14,19,15,16} and E = {3,9,2,10,5,6,8,7,4,1} ,
   which of the following are true?
   a) $A \subset C$
   b) $C = D$
   c) $A = B$
   d) $C \leftrightarrow D$
   e) $A \leftrightarrow C$

   (i) {b,d,c} (ii) {e,a,c} (iii) {a,c} (iv) {c,d} (v) {b,d}

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4. For any two non-empty sets A and B, which of the following are true?
   a) $A \cup B = \varnothing$
   b) $A \cap B = B \cap A$
   c) $A \cap B = B \cup A$
   d) $A \cup B = B \cap A$
   e) $A \cup B = B \cup A$

   (i) {c,e} (ii) {b,e} (iii) {c,e,b} (iv) {a,b} (v) {d,a,b}

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5. If A = {2,4,1} and B = {4,0,5} , then $A \cup B$ =

   (i) {4,0,5,2} (ii) {5,1,2,0,4} (iii) {4,1,5,2}
   (iv) {0,1,10,2,5} (v) {1,4,0,2,5,6}

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6. If A = {6,1,0,5,7} and B = {5,10,8,1,7} , then $A \cup B$ =

(i) {8,7,10,6,14,0,1,5} (ii) {10,0,8,1,15,5,7}

(iii) {10,6,7,1,8,5,0} (iv) {8,0,5,10,6,7}

(v) {8,7,1,6,10,0}

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7. If A = {10,4,1,5,11,14,3} and B = {10,1,4,11,13,9,6} , then A ∪ B =

(i) {10,4,9,5,6,1,3,13,14,11} (ii) {9,5,6,14,4,13,10,11,1}

(iii) {5,9,11,3,10,1,4,14,13,20} (iv) {3,9,1,19,14,13,10,11,5,4,6}

(v) {4,13,3,5,9,6,14,1,11}

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8. If A = {2,4,7} and B = {5,8,2} , then A ∩ B =

(i) {2,7} (ii) {2,12} (iii) {7,4,2} (iv) {5,2} (v) {2}

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9. If A = {6,3,0,2,8} and B = {2,7,6,10,1} , then A ∩ B =

(i) {2,1,6} (ii) {0,6,2} (iii) {8,3,6,2} (iv) {13,2,6} (v) {6,2}

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10. If A = {3,0,2,15,9,13,7} and B = {14,15,12,5,3,7,10} , then A ∩ B =

(i) {15,3,18,7} (ii) {15,12,7,3} (iii) {3,13,7,15} (iv) {15,7,3} (v) {13,2,7,3,15}

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11. If A = {0,3,6} and B = {4,9,2} , then A − B =

(i) {6,0,3} (ii) {6,0} (iii) {3,15,6,0} (iv) {} (v) {9,4,2}

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12. If A = {5,7,2,6,12,9} and B = {11,6,2,1,8,9} , then A − B =

(i) {19,7,5,12} (ii) {12,5,7} (iii) {7,9,12,5} (iv) {7,12} (v) {8,1,11}

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13. If A = {5,2,14,1,7,12,13,0} and B = {11,14,1,2,7,5,9,0} , then A − B =

(i) {12,16,13} (ii) {12,13} (iii) {13} (iv) {12,7,13} (v) {11,9}

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14. If A = {2,3,5,8} and B = {6,10,0,8} , then B − A =

(i) {} (ii) {0,8,10,6} (iii) {6,0,10} (iv) {0,10} (v) {10,6,15,0}

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15. If A = {3,13,12,1,4,2} and B = {15,10,11,13,9,2} , then B − A =

(i) {10,18,15,11,9} (ii) {11,9,13,10,15} (iii) {10,15,11,9}

(iv) {} (v) {10,9,11}

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16. If A = {10,2,6,15,5,9,0,1} and B = {5,7,11,15,9,13,12,1} , then B − A =

(i) {7,13,12,11} (ii) {13,11,7,17,12} (iii) {11,9,7,12,13}

(iv) {7,12,13} (v) {}

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17. The symmetric difference of set A = {2,3,0,5} and set B = {1,2,0,5} is

(i) (ii) (iii) (iv) (v)

{0,1,3} {3} {1,3} {1} {}

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18. The symmetric difference of set A = {9,7,2,6,10,5} and set B = {1,4,2,10,0,5} is

(i) {1,0,4,7,6,9} (ii) {1,0,6,4,7} (iii) {6,9,7}
(iv) {0,1,4} (v) {4,9,7,0,1,5,6}

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19. If μ = {-6,9,8,0,-9,7,-4,-8,-2,-1} , A = {-6,9,8} and B = {0,-9,8,9,7} , find A ∪ B

(i) {-6,-4,8,7,9,0,-9} (ii) {0,9,7,-9,8} (iii) {-9,-6,0,8,7,9}
(iv) {8,-9,7,-6,9} (v) {9,-2,-6,7,8,-9}

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20. If μ = {-7,7,-4,-1,6,3,-3,-9,-2,2,1} , A = {-7,7,-4,-1} and B = {-4,6,3,-3} , find A ∩ B

(i) {-2} (ii) {-9,-4} (iii) {-4} (iv) {}

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21. If μ = {-1,-7,5,-6,-2,6,-8,-4,3,8,1,-3,7,0} , A = {-1,-7,5,-6,-2} and B = {6,-1,-8,-4,-2,5} , find A − B

(i) {-7,-6,1} (ii) {1,-6} (iii) {-6} (iv) {} (v) {-6,-7}

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22. If μ = {-9,1,8,3,-1,-5,2,7,-4,-6,-3,6} , A = {-9,1,8,3} and B = {-1,-5,-9,2,7} , find B − A

(i) {-3,7,-1,-5} (ii) {7,2,-5} (iii) {7,-4,2,-1,-5}
(iv) {} (v) {-5,2,7,-1}

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23. If μ = {-9,6,-1,-6,-4,-3,-2,1,-5,8,9,7,4} , A = {-9,6,-1,-6} and B = {-4,-1,-6,-3,-2,1} , find (A − B) ∪ (B − A)

(i) {-2,-4,6,1,-3,-9} (ii) {-4,-2,-3,1,6} (iii) {-3,1,-2,9,-9,6,-4}
(iv) {-5,1,-4,6,-3,-9} (v) {1,6,-9,-3,-2}

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24. If μ = {0,1,3,-2,-8,-3,2,-4,7,8} , A = {0,1,3,-2} and B = {3,-2,-8} , find (A ∪ B) − (A ∩ B)

(i) {1,-8,0,-4} (ii) {0,1} (iii) {-8,0,1} (iv) {8,0,1} (v) {-8,1}

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25. If μ = {-4,-7,6,-5,8,3,-8,5,9,-2,-1,-6,-3,-9} , A = {-4,-7,6,-5,8,3} and B = {-8,3,5,-7} , find n(A ∪ B)

(i) 8 (ii) 6 (iii) 7 (iv) 10 (v) 9

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26. If μ = {-2,8,-9,7,3,-1,6,2,-4,4,-5,1} , A = {-2,8,-9,7} and B = {-2,3,-1,6,7} , find n(A ∩ B)

(i) 3 (ii) 2 (iii) (-1) (iv) 5 (v) 1

27. If $\mu = \{6,-1,7,-8,-2,-9,-5,-3,9,5\}$,
$A = \{6,-1,7\}$ and $B = \{-8,7,-2,6,-9\}$, find $n(A - B)$

(i) (-2) (ii) 0 (iii) 4 (iv) 1 (v) 2

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28. If $\mu = \{-6,-7,-5,2,-2,-3,7,8,-4,4,3,5,-9,-8,1\}$,
$A = \{-6,-7,-5,2,-2\}$ and $B = \{-3,-6,-7,7,8,-4,-2\}$, find $n(B - A)$

(i) 6 (ii) 5 (iii) 4 (iv) 3 (v) 2

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29. If $\mu = \{-6,1,-2,5,7,-1,-7,-3,-8,-4,6,-9\}$,
$A = \{-6,1,-2\}$ and $B = \{-2,1,5,7,-1,-7,-3\}$, find $n((A - B) \cup (B - A))$

(i) 7 (ii) 9 (iii) 5 (iv) 3 (v) 6

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30. If $\mu = \{2,-4,-1,-9,8,6,3,-2,7,-3,-6,0,1,5,-5,4\}$,
$A = \{2,-4,-1,-9,8,6\}$ and $B = \{3,8,6,-2,2,-4\}$, find $n((A \cup B) - (A \cap B))$

(i) 4 (ii) 3 (iii) 1 (iv) 5 (v) 7

Assignment Key

1) (v)
2) (iii)
3) (iv)
4) (ii)
5) (ii)
6) (iii)
7) (i)
8) (v)
9) (v)
10) (iv)
11) (i)
12) (ii)
13) (ii)
14) (iii)
15) (iii)
16) (i)
17) (iii)
18) (i)
19) (iii)
20) (iii)
21) (v)
22) (v)
23) (i)
24) (iii)
25) (i)
26) (ii)
27) (iv)
28) (iii)
29) (v)
30) (i)